## **Claims**

## What is claimed is:

- 1 1. An interface enhancing apparatus, comprising:
- 2 a first component configured to be mechanically and electrically coupled with
- 3 an interface panel of a modular platform board; and
- 4 a second component coupled to the first component, the second component
- 5 being substantially parallel with the interface panel when the first component is mated
- 6 with the interface panel, and having one or more enhanced interfaces configured for
- 7 electrical communication with the modular platform board.
- 1 2. The interface enhancing apparatus of Claim 1, wherein the first component
- 2 includes a carrier substrate configured to electrically interconnect the second
- 3 component with the modular platform board.
- 1 3. The interface enhancing apparatus of Claim 2, wherein the carrier substrate is
- 2 one of a printed circuit board, flex circuit, discrete metal wires, fiberoptic cables, and
- 3 unwired connections.
- 1 4. The interface enhancing apparatus of Claim 1, wherein the second component
- 2 includes a carrier substrate configured to electrically interconnect the first component.

- 1 5. The interface enhancing apparatus of Claim 4, wherein the carrier substrate is
- 2 one of a printed circuit board, flex circuit, discrete metal wires, fiberoptic cables, and
- 3 unwired connections.
- 1 6. The interface enhancing apparatus of Claim 1, wherein the second component
- 2 has a first side opposably facing the interface panel and an opposite second side.
- 1 7. The interface enhancing apparatus of Claim 6, wherein the one or more
- 2 enhanced interfaces include one or more I/O interfaces.
- 1 8. The interface enhancing apparatus of Claim 7, wherein the one or more I/O
- 2 interfaces are selected from a group of connectors including IEEE 1394, Ethernet,
- 3 USB, Serial, cable, and fiberoptic.
- 1 9. The interface enhancing apparatus of Claim 7, wherein the one or more
- 2 interfaces are positioned on the first side.
- 1 10. The interface enhancing apparatus of Claim 7, wherein the one or more
- 2 interfaces are positioned on the second side.
- 1 11. The interface enhancing apparatus of Claim 1, wherein the modular platform
- 2 board is at least part compliant with a standard and an aggregate protrusion distance
- 3 from the interface panel is within a dimension requirement of the standard.

- 1 12. The interface enhancing apparatus of Claim 11, wherein the standard is
- 2 PICMG 3.0 ATCA, and the dimension requirement is 95 mm.
- 1 13. The interface enhancing apparatus of Claim 12, wherein the aggregate
- 2 protrusion distance of the first component, second component, and the one or more
- 3 enhanced interfaces is less than or equal to 95 mm.
- 1 14. The interface enhancing apparatus of Claim 1, wherein the first component is
- 2 removably coupled to the modular platform board through an expansion slot in the
- 3 interface panel.
- 1 15. The interface enhancing apparatus of Claim 14, wherein the expansion slot is
- 2 a mezzanine card module.
- 1 16. The interface enhancing apparatus of Claim 1, further comprising a support
- 2 bracket removably coupled between the second component and the interface panel
- 3 to provide additional support for the second component.
- 1 17. The interface enhancing apparatus of Claim 1, wherein the first component
- 2 and the second component are a single unit having a single carrier substrate.
- 1 18. A system, comprising:
- 2 a modular platform board having an interface panel; and

- 3 an interface enhancing apparatus attached to the interface panel, the interface
- 4 enhancing apparatus including
- 5 a first component mechanically and electrically coupled to the interface panel
- 6 of the modular platform board, and
- 7 a second component coupled to the first component, the second component
- 8 being substantially parallel with the interface panel and having one or more
- 9 enhanced interfaces configured for electrical communication with the modular
- 10 platform board.
- 1 19. The system of Claim 18, wherein the first component includes a carrier
- 2 substrate configured to electrically interconnect the second component with the
- 3 modular platform board.
- 1 20. The system of Claim 19, wherein carrier substrate is one of a printed circuit
- 2 board, flex circuit, discrete metal wires, fiberoptic cables, and unwired connections.
- 1 21. The system of Claim 18, wherein the second component includes a carrier
- 2 substrate configured to electrically interconnect the first component.
- 1 22. The system of Claim 21, wherein the carrier substrate is one printed circuit
- 2 board, flex circuit, discrete metal wires, fiberoptic cables, and unwired connections.

- 1 23. The system of Claim 18, wherein the second component has a first side
- 2 opposably facing the interface panel and an opposite second side.
- 1 24. The system of Claim 23, wherein the one or more enhanced interfaces include
- 2 one or more I/O interfaces.
- 1 25. The system of Claim 24, wherein the one or more I/O interfaces are selected
- 2 from a group of connectors including including IEEE 1394, Ethernet, USB, Serial,
- 3 cable, and fiberoptic.
- 1 26. The system of Claim 23, wherein the one or more interfaces are positioned on
- 2 the first side.
- 1 27. The system of Claim 23, wherein the one or more interfaces are positioned on
- 2 the second side.
- 1 28. The system of Claim 18, wherein the modular platform board is at least part
- 2 compliant with a standard and an aggregate protrusion distance from the interface
- 3 panel is within a dimension requirement of the standard.
- 1 29. The system of Claim 28, wherein the standard is PICMG 3.0 ATCA, and the
- 2 dimension requirement is 95 mm.

- 1 30. The system of Claim 29, wherein the aggregate protrusion distance of the first
- 2 component, second component, and the one or more enhanced interfaces are less
- 3 than or equal to 95 mm.
- 1 31. The system of Claim 18, wherein the first component is removably coupled to
- 2 the modular platform board through an expansion slot in the interface panel.
- 1 32. The interface enhancing apparatus of Claim 31, wherein the expansion slot is
- 2 a mezzanine card module.
- 1 33. The system of Claim 18, further comprising a support bracket removably
- 2 coupled between the second component and the interface panel to provide additional
- 3 support for the second component.
- 1 34. The interface enhancing apparatus of Claim 18, wherein the first component
- 2 and the second component are a single unit having a single carrier substrate.